

The Effects of Outdoor Recreation Activities on State and Local Economies

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In making important decisions, resource managers are often faced with evaluating alternatives. In making decisions about recreation development or changing the opportunities offered to the public, they rely heavily on information provided by recreation planners. Recreation planners must be able to adequately explain the benefits, costs, and possible social, economic, and environmental effects of strategies or actions. Currently, the potential economic effects of recreation resources management decisions on local or regional economies is receiving much attention.

In recent years, considerable advances have been made in planners' abilities to evaluate the economic importance and impact of recreation on localities or regions. The USDA Forest Service has developed a large-scale input/output model which is capable of simulating the economic interrelationships between firms, industries, and government in a local or regional economy, including those involved with and affected by recreation. This model, called IMPLAN, enables planners to assess the interdependence of recreation in local or regional economies and estimate the potential impacts on local or regional economies of changes in recreation trends, patterns, or management actions.

Operation of the IMPLAN model to analyze the economic interdependence and impact of recreation on a local or regional economy requires data describing recreational expenditures. As a result of cooperative research efforts, local and regional recreational expenditure data have been collected for many states through the efforts of the Public Area Recreation Visitor Study (PARVS) Working Group. PARVS was designed with a specific objective of providing expenditure data compatible with the IMPLAN model.

The combination of the IMPLAN model with PARVS data provides the most credible system currently available for analyzing the economic interdependence and impact of recreation on local and regional economies. The rationale behind the IMPLAN/PARVS system, how it works, the data needed to make it work, and examples of results obtained from its successful application are described in this paper.

Economic Interdependence and Impact: The Concepts

Economic impact is a term in sharp contrast with the more widely used concepts of economic value and efficiency. *Economic value* is typically identified as a person's willingness to pay for the

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opportunity to recreate and, as such, represents the direct worth of on-site recreational access to recreational visitors. *Economic efficiency* is commitment of resources at a level sufficient to maximize the net difference between total social benefits and total costs of producing recreational opportunities.

Economic impact concerns the sale of goods and services stimulated by recreational visits and the resulting distribution of spending and production. Economic impact analysis measures the gains or losses which occur among businesses and industries as a result of changes in recreation visitation. Changes in visitation could be the result of any number of possible changes in demand factors, such as increased population, taste changes and resulting substitution of activities, or change in socio-economic conditions. The change in visitation could also be the result of a change in supply factors, such as access policy, entrance requirements, or capacity. Maximizing economic impact by influencing changes in visitation neither implies economic efficiency nor maximizing social welfare. From a local or state economic development perspective, however, maximizing economic impact may be a legitimate goal of recreation resource allocation and management.

Impact on an economy can be examined in great detail. Analysis is intended to go beyond determination of the *direct effects*, which are simply the amount of increased inputs purchased and used to manufacture or produce the final goods and services purchased by recreationists or by the managing agency. *Indirect effect* refers to the value of the inputs used by firms called upon to produce additional goods and services for those firms impacted directly by recreational spending. *Induced effects* are caused by or result from the direct and indirect effects of recreation spending. Induced effects are related to persons and businesses receiving added income as a result of local spending by employees and managers of the firms and plants which are directly and indirectly impacted by recreational spending. The added income resulting from employees' and managers' spending produces increased demand for goods and services and, in turn, increased production and sales of inputs. The increased production and sales of inputs represents the induced effect of recreational spending. The total economic impact of expenditures related to recreational visits is the sum of direct, indirect, and induced effects. Typically, the total effects are between 1/2 to 2 times more than the amount recreationists originally spent in a given local or state economy.

Although recreationists' expenditures often appear high, the net contribution to a local or state economy can be modest. A large portion of the retail sales made in rural areas, such as those surrounding parks and reservoirs, is often subsequently spent outside the economy's borders through the necessary wholesale purchases of production inputs and consumer goods not produced locally.

Tourism, particularly that associated with visitation to parks for recreation, generates an interesting mix of direct effects. While reference is often made to the *tourist industry*, there are actually a number of industries which make sales to visitors, but which also serve local residents and industries. It quickly becomes evident that appropriate economic analysis needs to look at individual

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sectors of the economy to identify the specific effects of expenditures.

In requesting estimates of economic impact, many planners and managers are interested in regional multipliers. Regional economic multipliers are very important. They also are sometimes difficult to grasp. A *multiplier* is the total effect divided by the direct effects. In short, such a multiplier expresses the total amount of economic activity in a region generated per dollar of direct economic effect of recreational spending. Multipliers describe the effects of the first and all subsequent rounds of stimulated spending for inputs and consumer products and services. The multiplier multiplied by the direct effect of recreational spending equals the total economic effect. The greater the multiplier, the greater is the amount of stimulated economic activity associated with a change in visitor expenditures.

Implications of Economic Interdependence and Impacts

Expenditures made in association with recreational trips must be examined in relation to an impact region, defined in a number of ways. Typically, an impact region represents a multiple county area or a state within which a recreation opportunity exists, and which is the area of interest to planners, politicians, the business community, or others for its economic growth need or potential.

Of primary interests are usually those expenditures made within an impact region by residents from other regions (non-residents). These expenditures represent outside money flowing into the regional economy. It is assumed that without the park or recreation facility, these revenues dollars would not flow into the region. Residents' expenditures represent money already in the region and do not usually represent economic growth potential. Mostly they represent a particular pattern by which dollars spent for recreation at the park or site flow through the local economy.

The argument has been made, however, that if the park was not located in the region, expenditures to participate in resource-based types of recreation by residents would likely occur at parks in some other region or that this money may be spent on items or activities with lower value-added percentages. While economic impact usually refers to income changes resulting from expenditures by non-resident visitors to a region, there is also some justification for examination of expenditures related to recreation visits by residents. The relevance of examining the economic effects of non-resident and resident expenditures depends on the policy, allocational, or welfare questions being posed.

Expenditure of dollars by residents usually does not represent new income to the region. However, if a recreation or tourism business is highly interrelated with other industries in a local or regional economy, resident expenditures will tend to have a major effect on the magnitude and distribution of total expenditures, income, employment, and other economic factors in the economy.

Enhancing Rural Economies through Amenity Resources

From a local or state economic development perspective, however, maximizing economic impact may be a legitimate goal of recreation resource allocation and management.

Thus, analysis of resident spending is useful for assessing the interdependence of recreation to other industries in a local or regional economy. The potential problem with including resident spending is that the results may be misinterpreted as new income and net economic growth in the region of interest. The proper interpretation is that resident spending represents the interdependence between a park and a local economy. If this interdependence is relatively high, recreation is expected to be an important component of the local economy.

IMPLAN: The Analysis Component

Expenditure items included in the PARVS mailback questionnaire were developed specifically to provide visitor expenditure profiles to use with IMPLAN. These obtained expenditure profiles are bridged to the IMPLAN process through a series of mathematical transformations stating the relationship between visitor expenditures, as reported in the PARVS survey, and the sectors of the economy modeled by IMPLAN. For instance, one dollar spent for gasoline, a common recreation-related expenditure, provides direct stimulation to those industries and services contributing to the manufacture and distribution of gasoline. Expenditures on gasoline result in expenditure allocations across the following IMPLAN sectors: petroleum refining, lubricating oils and greases, petroleum and coal production, rail-related transportation, pipe transportation, other wholesale trade, and other retail trade. Once the gasoline purchases are distributed or *bridged* across IMPLAN sectors, the IMPLAN process then provides estimates of the amount of personal and proprietary income, employment, taxes, value added, overall production, and spending in a specified county, group of counties, state, or region as a result of recreationists' spending. The interest is usually in the effect of an increase or decrease in recreation visitation and the effect of this visitation change on demand for particular goods and services.

IMPLAN is the product of the Land Management Planning Division, USDA Forest Service. The second version of IMPLAN is currently operated from Fort Collins, Colorado, where software and the supporting data bases reside on the Fort Collins Computing Center mainframe computer. A microcomputer version of IMPLAN is also available.

The revised version of IMPLAN emphasizes software and better defined IMPLAN sectors relevant to analyzing recreation and tourism. In addition to improvement of software for Version II, extensive collaboration between the IMPLAN development staff and PARVS coordinating scientists has provided excellent bridging of PARVS data. Highly disaggregated commodity and service groups are used for basic allocation of expenditures.

Amenity Resources as a Rural Development Tool

The total effects [of recreational spending] are between 1/2 to 2 times more than the amount recreationists originally spent in a given local or state economy.

Public Area Recreation Visitor Study: The Data Component

In 1982, plans were begun for replicating the 1977 Federal Estate Visitor Survey. At the same time, several state and federal agencies and related national associations, including the National Association of State Recreation Planners (NASRP) and the Council of State Planning Agencies, were independently seeking ways to credibly estimate the economic benefits of recreation and tourism. With the joint leadership of the USDA Forest Service, NASRP, National Park Service, and U.S. Army Corps of Engineers, economists and scientists working in this area of recreation and tourism developed a system for producing credible and cost-effective estimates of the various economic parameters related to recreation and tourism.

Currently six federal agencies, 11 states, three national associations, and one university, as follow, are cooperating with PARVS:

Organizations

Cooperators

States

Georgia	Virginia
Kansas	North Carolina
Minnesota	South Carolina
Missouri	New Mexico
Tennessee	New Jersey
Indiana	

Federal Agencies

President's Commission on Americans Outdoors
USDA Forest Service
National Park Service
Tennessee Valley Authority
U.S. Army Corps of Engineers
National Oceanic and Atmospheric Administration

National Associations

National Council of State Planning Agencies
National Association of State Recreation Planners
National Association of State Park Directors

University of Georgia

Department of Agricultural Economics
Institute of Behavioral Research

If [a] park was not located in the region, expenditures to participate in resource-based types of recreation by residents would likely occur at parks in some other region.

Data have been collected nationwide since June 1985 and continue to be collected. While some data sets are complete, some additional state agencies are just beginning to collect data. There have been more than 40,000 contacts made with recreation visitors. More than 9,000 of those visitors have provided detailed information about their annual and trip-related expenditures. Expenditure data were collected by all states involved, though federal agencies were restricted to collecting expenditure data only in the Southern Region of the United States. Data were collected in three phases:

1. On-site: Interviews were conducted during recreation trips to describe recreation visitors, their recreation behavior, and their travel patterns. The methodology developed required roadside interviews of visitors as they exited sites. Basic data were collected on group and individual characteristics and activity participation. All data elements were definitions, categories, and standards.
2. At home: Selected visitors interviewed at recreation areas were mailed follow-up questionnaire after their trips to obtain information about trip-related expenditures. Information was requested to describe trip-related expenditures made at home, before or after the trip; expenditures during travel to or from the sites; and expenditures made in the immediate vicinity of the destination recreation site itself. Also, annual expenditures for durable items used on the trips were described.
3. About the site: Recreation planners or managers were asked to provide descriptions of visitation to their areas so that estimates of economic importance could be extrapolated to recreation sites with attributes similar to the sites actually studied.

Examples of Economic Effects

Examples of the economic effects of outdoor recreation on selected sites are represented graphically on the following pages in terms of--

- Local income and employment multipliers for each
- Economic impact of site-use on annual total income
- New jobs resulting from non-resident spending at the sites

Analysis of resident spending is useful for assessing the interdependence of recreation to other industries in a local or regional economy.

- Total statewide economic activity associated with the sites
- Local impact regions for the surveyed sites.

The sites selected were those in South Carolina, North Carolina, Georgia, Tennessee, Kansas, Indiana, and the National Park Service River systems.

South Carolina

Two sites were selected to represent South Carolina state parks. Myrtle Beach State Park was selected to represent coastal zone state parks, and Table Rock State Park was selected to represent the four non-coastal state parks.

North Carolina

Two representative site types were identified in North Carolina: state parks and state recreation areas. Hanging Rock State Park was selected to represent the seven North Carolina State Parks, and Kerr Lake, the only North Carolina Recreation Area, was included to represent that site type.

Georgia

Five areas were selected to represent eight Georgia state recreation sites of two types. Red Top Mountain, Unicoi, F.D. Roosevelt, and Little Ocmulgee were selected to represent state parks, and the Dahlonega Gold Museum was selected to represent state historical sites.

Tennessee

Four types of recreational sites were identified in Tennessee: recreation parks, natural parks, cultural parks, and river parks. Fall Creek Falls State Park was selected to represent the four Tennessee recreation parks, and Fort Pillow was selected to represent the two state cultural parks. As the only sites representing their types, Frozen Head State Park was selected to represent state

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natural parks, and Hiawasee was selected to represent river parks.

Kansas

A single site, Pomona State Park, was selected to represent seven Kansas state parks.

Indiana

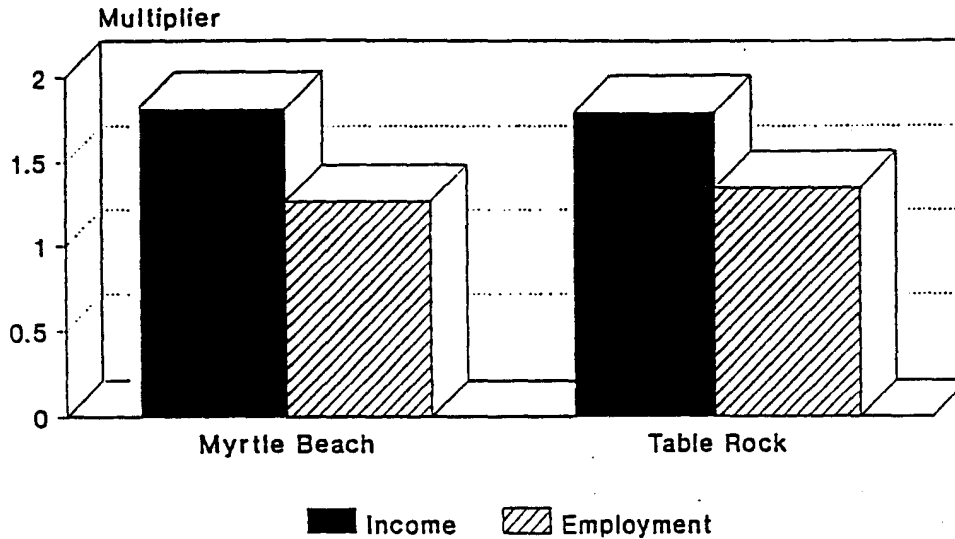
Four areas were selected to represent 21 Indiana recreation sites of four types. Wyandotte Woods was selected to represent state forest parks, Pigeon River was selected to represent fish and wildlife areas, Monroe Lake was selected to represent reservoirs, and Potato Creek was selected to represent state parks.

National Park Service River Sites

Three site types were identified among National Park Service river sites. Upper Delaware National Scenic and Recreation River located in New York and Pennsylvania was selected to represent National Scenic Recreational Rivers, Delaware Water Gap Recreation Area located in northwestern Pennsylvania was selected to represent National Recreation Areas, and New River Gorge National River in southwestern West Virginia was selected to represent National River Parks.

South Carolina

Figure 1--Local Income and Employment Multipliers for South Carolina State Parks



Note: An employment multiplier is the ratio of additional jobs generated as a result of first and subsequent rounds of non-resident spending to the jobs created by the initial (direct) spending of non-residents.

Figure 2--Economic Impact on Annual Total Income of Non-resident Spending at Selected South Carolina Parks (\$ million)

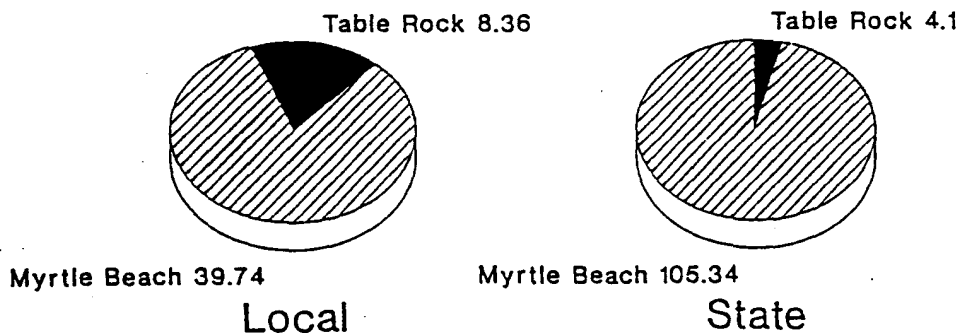


Figure 3--New Jobs Resulting from
Non-resident Spending at Selected
South Carolina Parks

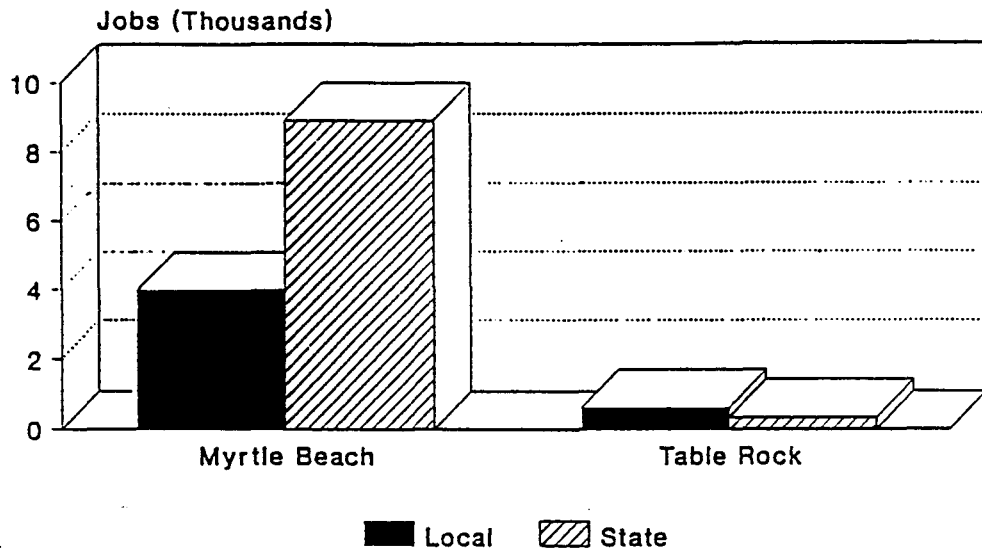
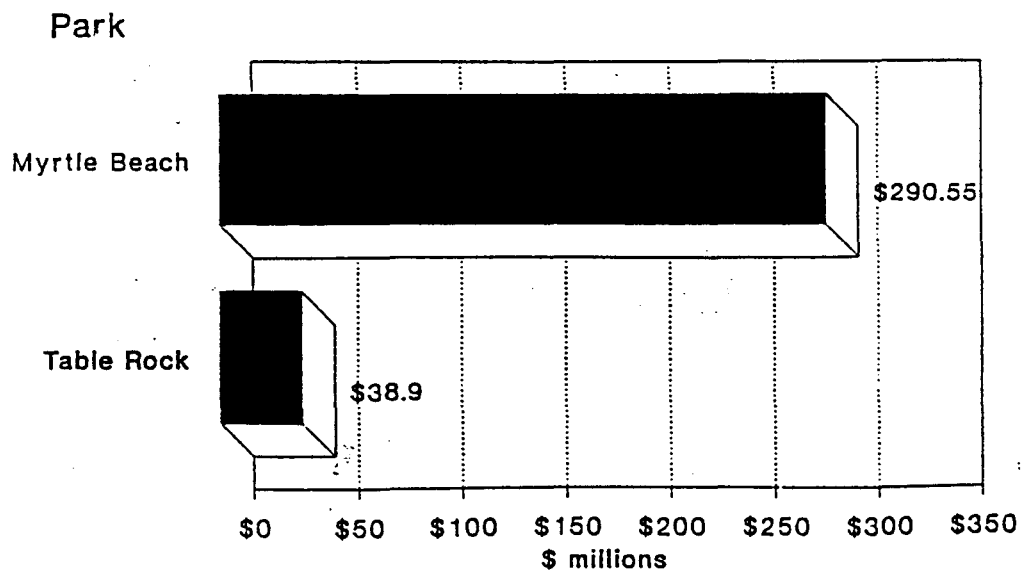
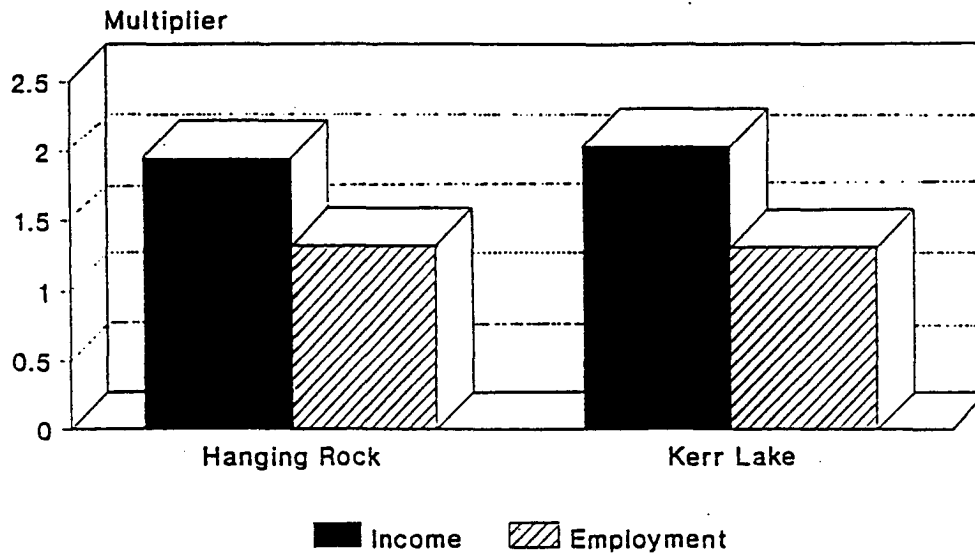


Figure 4--Total Statewide Economic
Activity Associated with Selected
South Carolina Parks



North Carolina

Figure 1--Local income and employment
Multipliers for North Carolina
State Parks



Note: An employment multiplier is the ratio of additional jobs generated as a result of first and subsequent rounds of non-resident spending to the jobs created by the initial (direct) spending of non-residents.

Figure 2--Economic Impact on Annual
Total Income of Non-resident Spending
at Selected North Carolina Parks

(\$ million)

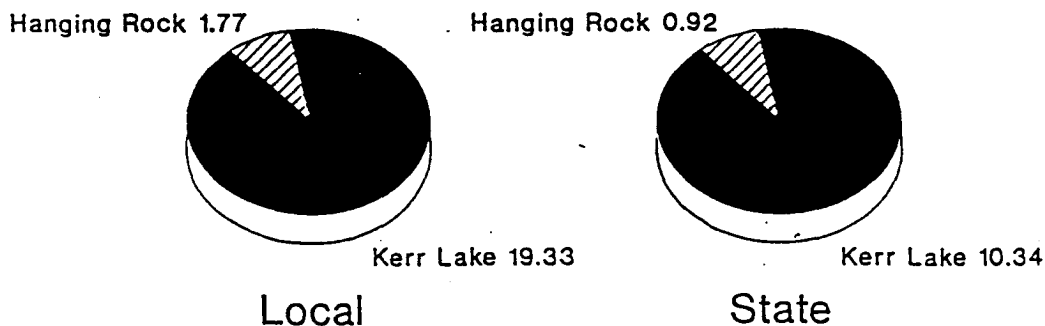


Figure 3--New Jobs Resulting from
Non-resident Spending at Selected
North Carolina Parks

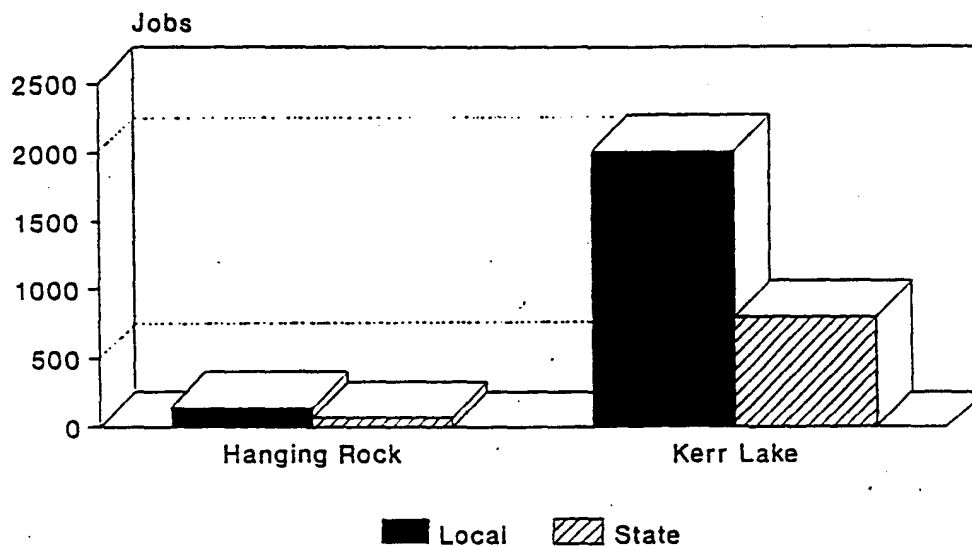
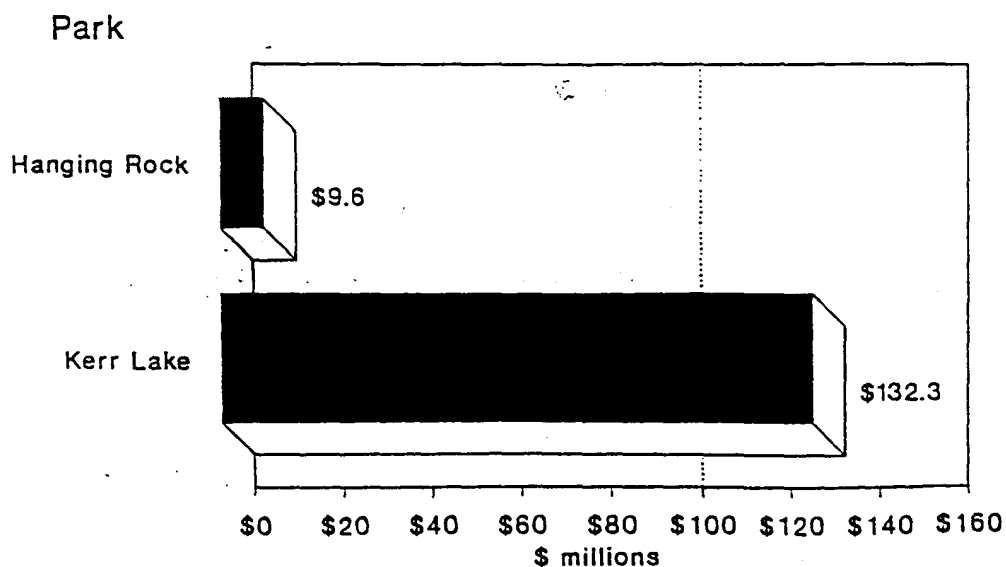
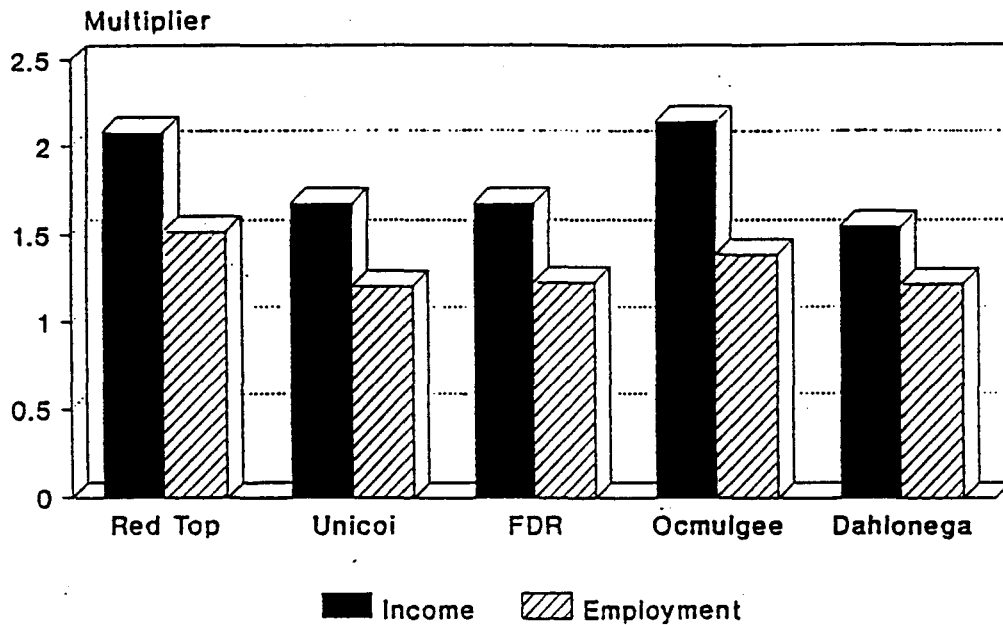


Figure 4--Total Statewide Economic
Activity Associated with Selected
North Carolina Parks



Georgia

Figure 1--Local income and employment Multipliers for Georgia State Parks



Note: An employment multiplier is the ratio of additional jobs generated as a result of first and subsequent rounds of non-resident spending to the jobs created by the initial (direct) spending of non-residents.

Figure 2--Economic Impact of Nonresident Recreation on Annual Total Income at Selected Georgia Parks (\$ million)

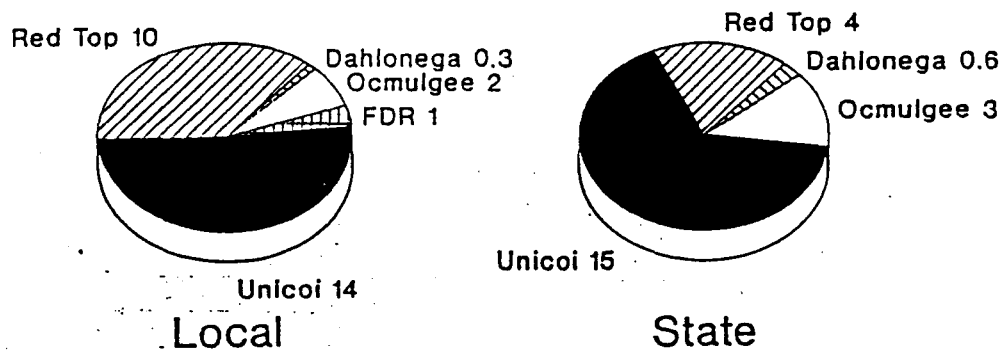


Figure 3--New Jobs Resulting from Nonresident Spending at Selected Georgia Parks

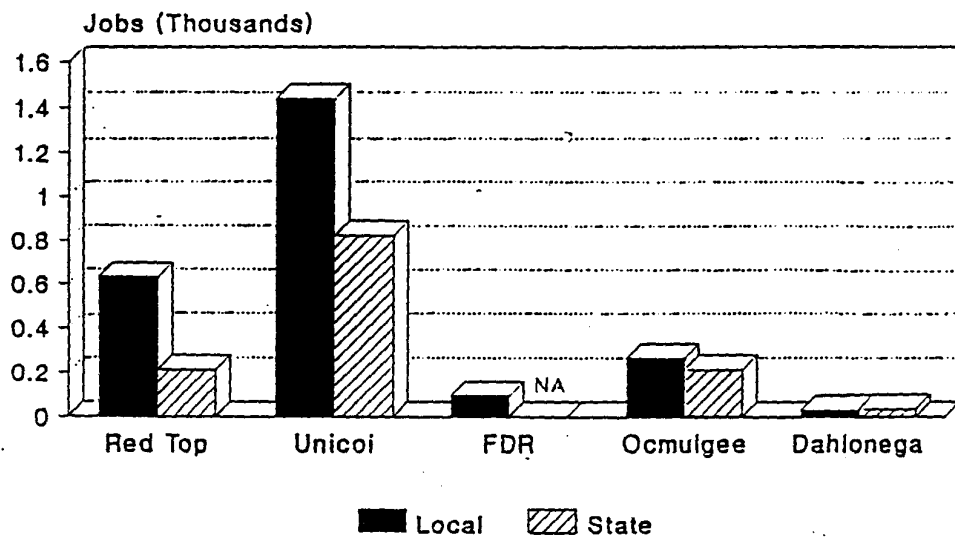
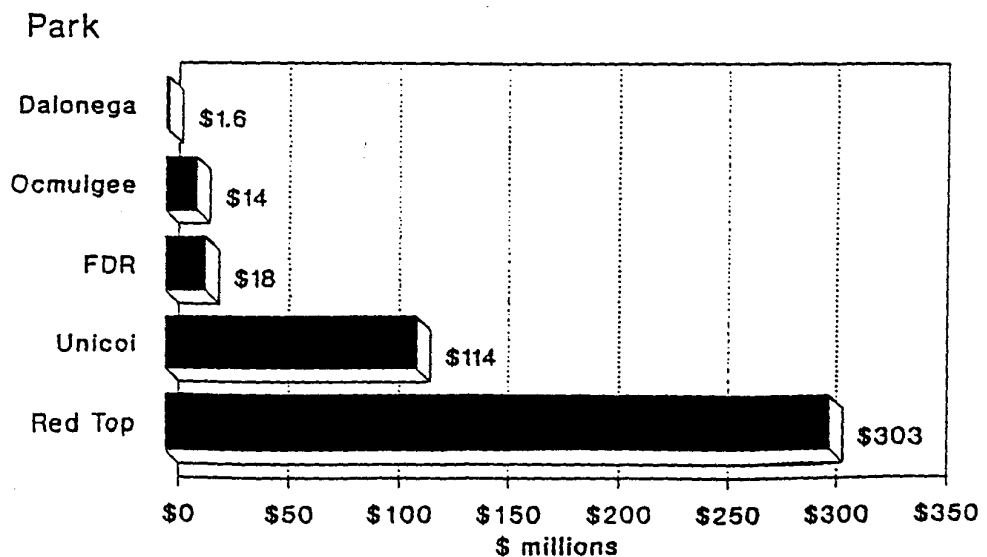
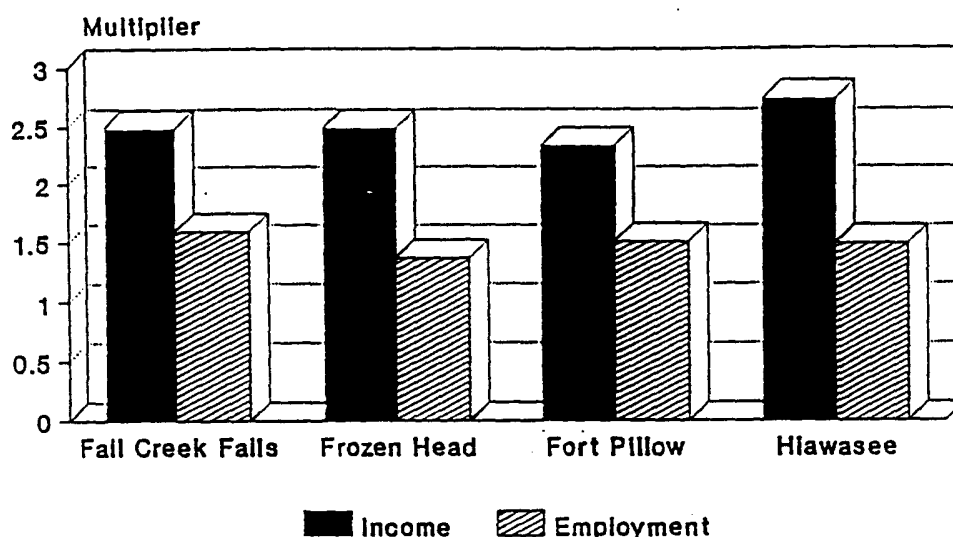


Figure 4--Total Statewide Economic Activity Associated with Selected Georgia Parks



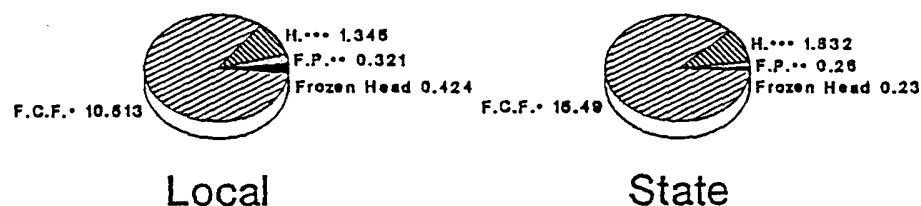
Tennessee

Figure 1--Local Income and Employment Multipliers for Tennessee State Parks



Note: An employment multiplier is the ratio of additional jobs generated as a result of first and subsequent rounds of non-resident spending to the jobs created by the initial (direct) spending of non-residents.

Figure 2--Economic Impact on Annual Total Income of Non-resident Spending at Selected Tennessee Parks (\$ million)



• Fall Creek Falls
 •• Fort Pillow
 ••• Hiawasee

Figure 3--New Jobs Resulting from Non-resident Spending at Selected Tennessee Parks

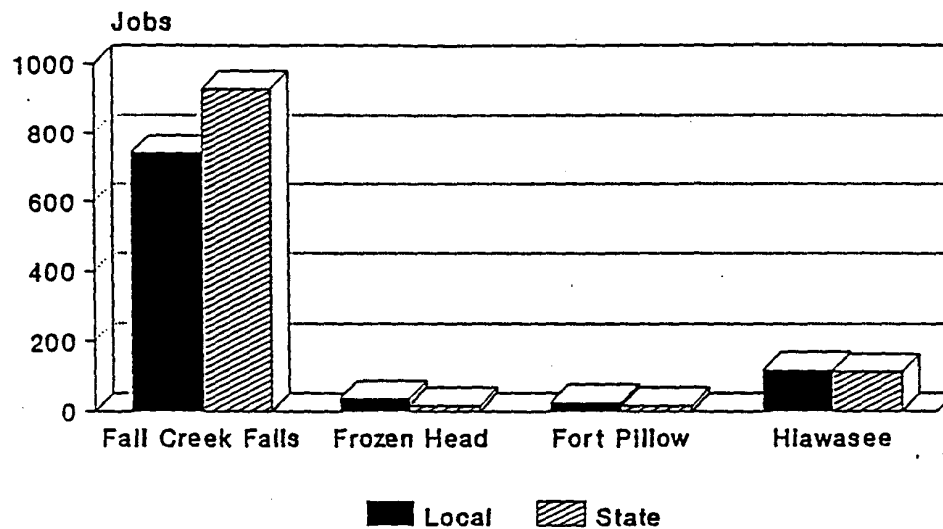
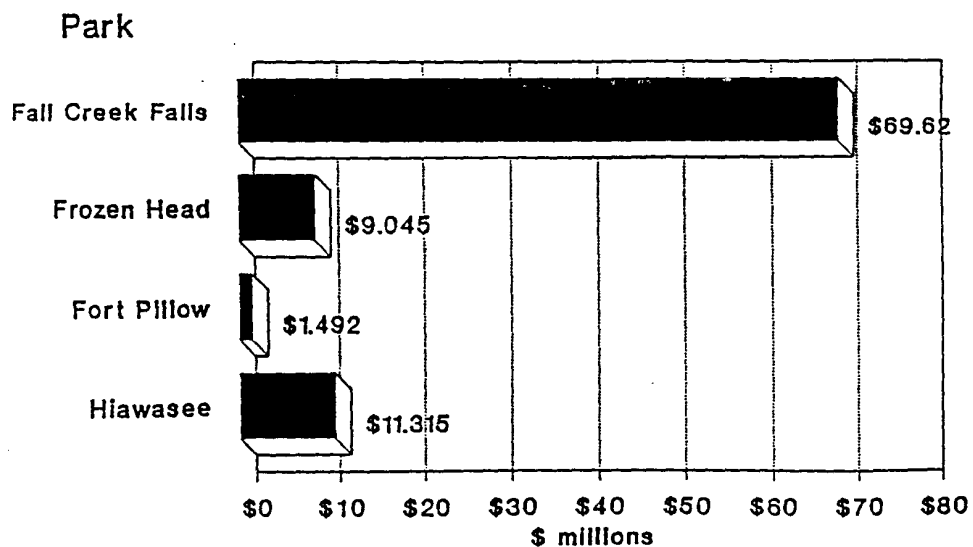
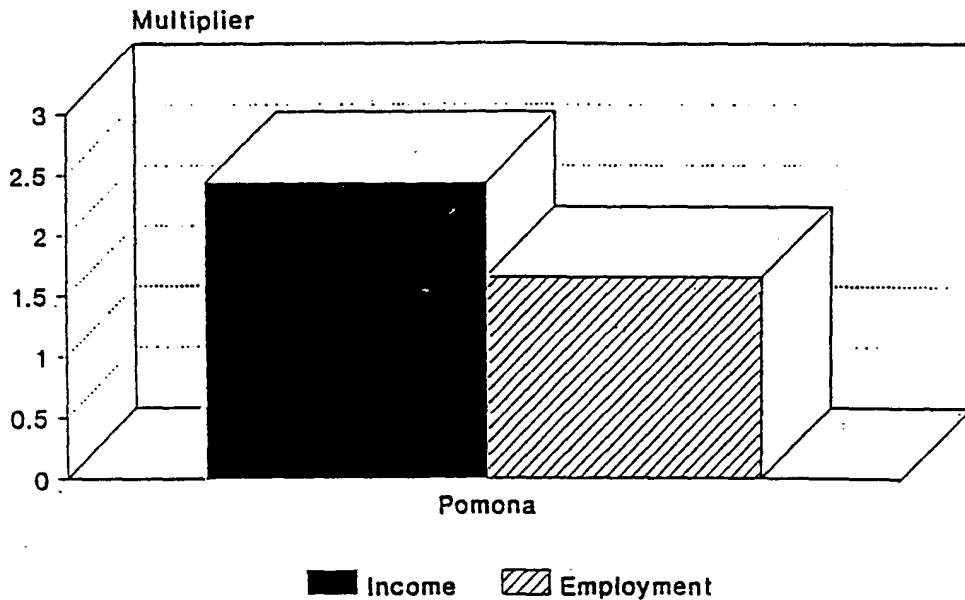


Figure 4--Total Statewide Economic Activity Associated with Selected Tennessee Parks



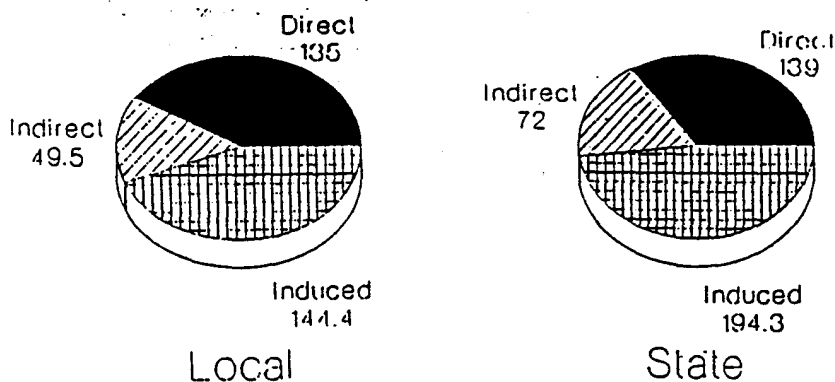
Kansas

Figure 1--State Income and Employment Multipliers for Pomona State Park



Note: An employment multiplier is the ratio of additional jobs generated as a result of first and subsequent rounds of non-resident spending to the jobs created by the initial (direct) spending of non-residents.

Figure 2--Annual Economic Impact on Total Income* from Non-resident Visitation to Pomona from Current Use



*in thousands of dollars

Figure 3--New Jobs Resulting from
Non-resident Spending at
Pomona State Park

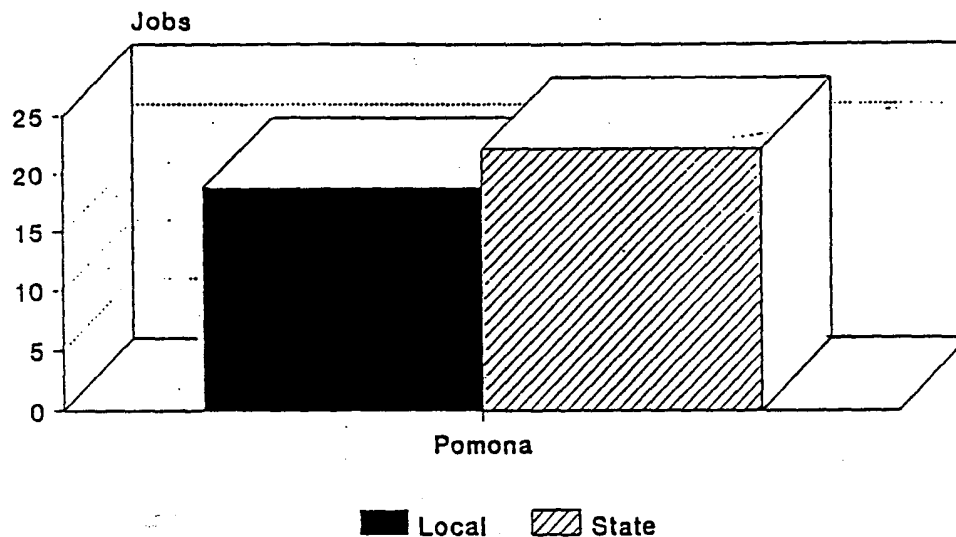
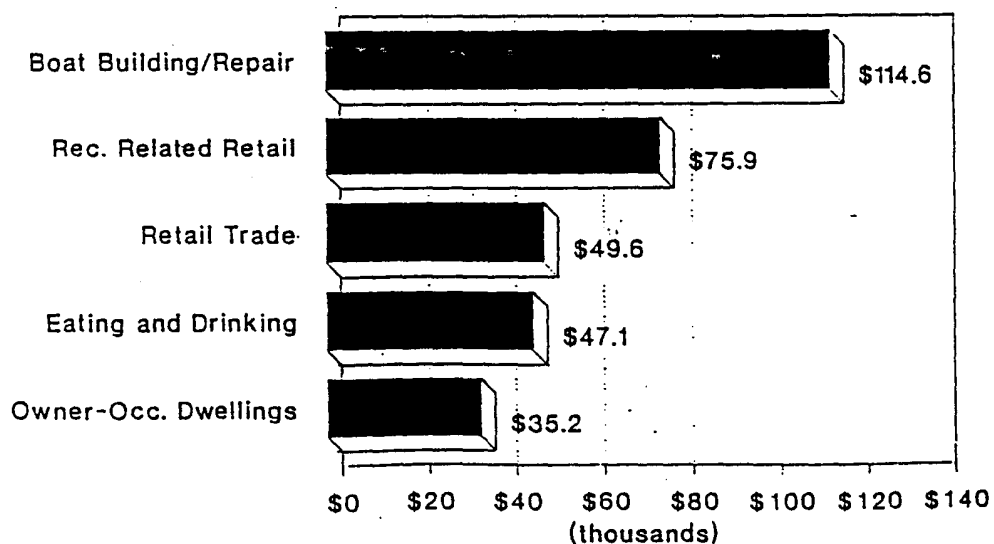


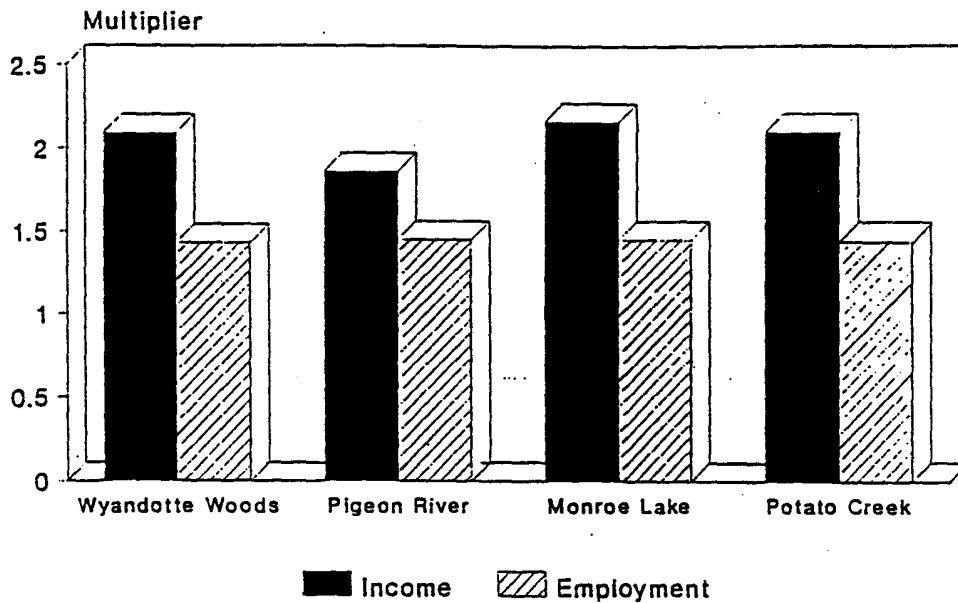
Figure 4--Annual Economic Impact* of
Non-Local Visitation to Pomona
by Top 5 Affected Industry Sectors



*on local total gross output

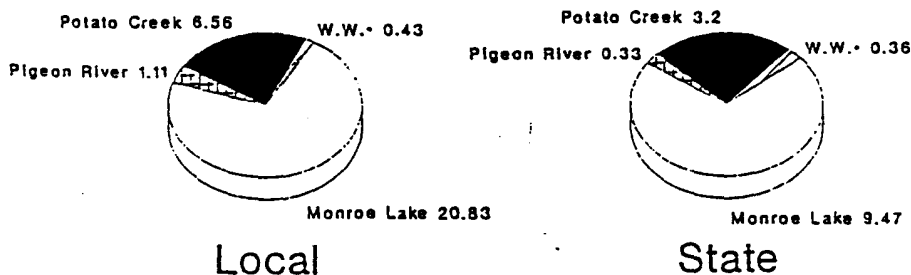
Indiana

Figure 1--State Income and Employment Multipliers for Indiana State Parks



Note: An employment multiplier is the ratio of additional jobs generated as a result of first and subsequent rounds of non-resident spending to the jobs created by the initial (direct) spending of non-residents.

Figure 2--Economic Impact on Annual Total Income of Non-resident Spending at Selected Indiana Parks (\$ million)



*Wyandotte Woods

Figure 3--New Jobs Resulting from
Non-resident Spending at Selected
Indiana Parks

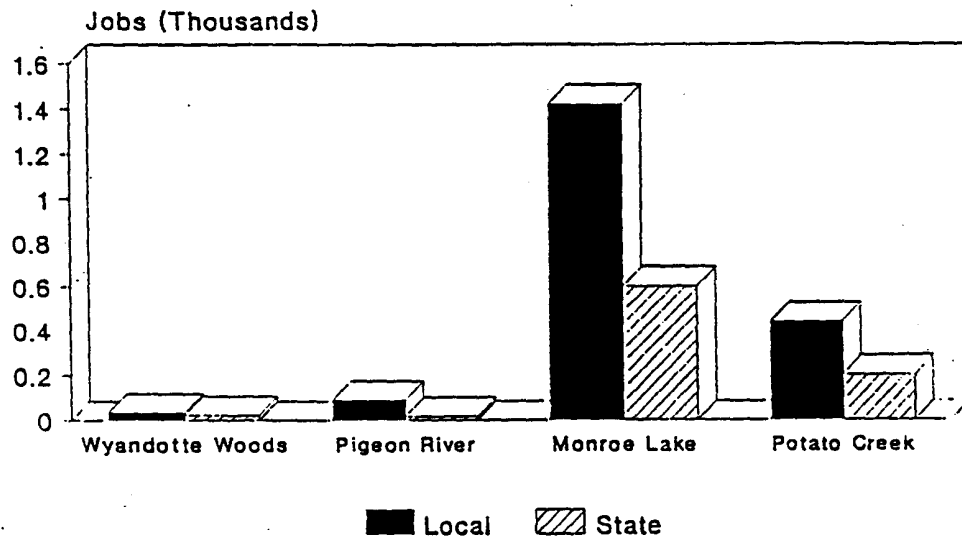
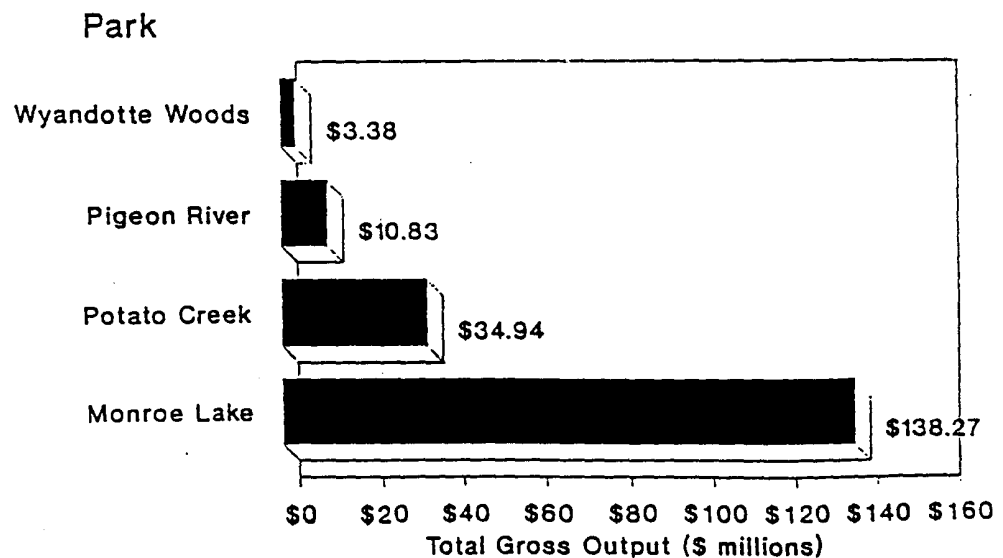
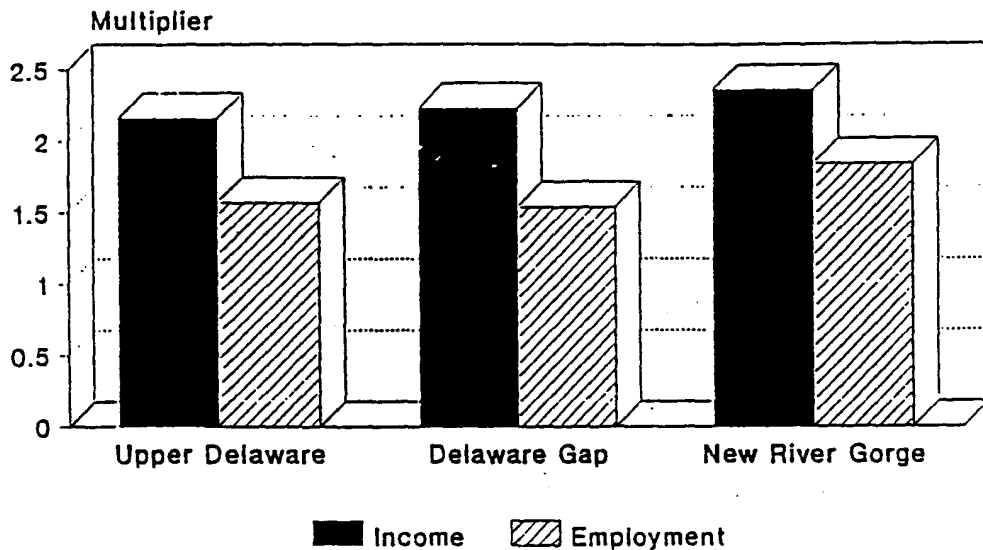


Figure 4--Total Statewide Economic
Activity Associated with Selected
Indiana Parks



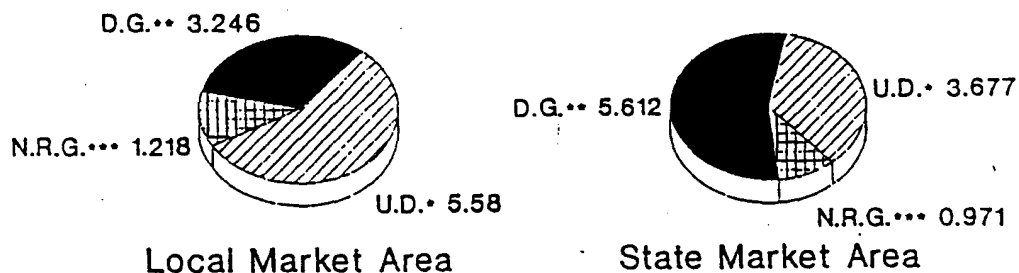
National Park Service River Sites

Figure 1--Local Income and Employment Multipliers for National Park River Sites



Note: An employment multiplier is the ratio of additional jobs generated as a result of first and subsequent rounds of non-resident spending to the jobs created by the initial (direct) spending of non-residents.

Figure 2--Economic Impact on Annual Total Income of Non-resident Spending at Selected River Sites (\$ million)



•Upper Delaware
••Delaware Gap
•••New River Gorge

Figure 3--New Jobs Resulting from Non-resident Spending at Selected River Site Parks

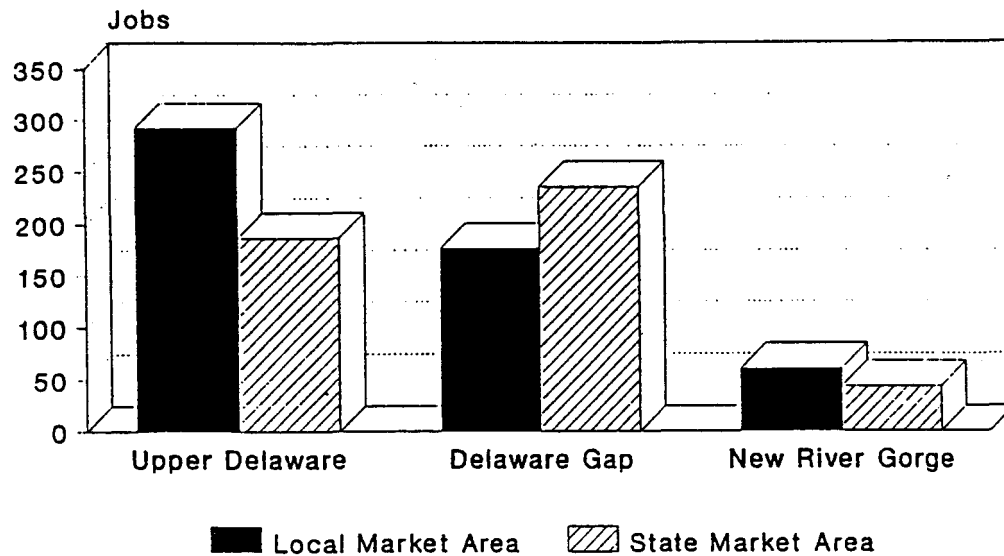


Figure 4--Total Statewide Economic Activity Associated with Selected River Site Parks

